

CLAIMS:

1. A system for imaging the interior of a bodily cavity of a patient comprising:
a first imaging means positionable within and for producing a first image of said
5 interior; and
at least a second imaging means positionable within and for producing a second
image of said interior;
wherein said second imaging means is movable relative to the first imaging
means and positionable in a location wherein said first image depicts the location of the
10 second imaging means.
2. The system according to claim 1 further comprising a display means for
displaying said first and second images.
- 15 3. The system according to claim 1, further comprising a tissue ablation means for
ablating tissue in the bodily cavity, said ablation means being movable relative to the
first imaging means.
4. The system according to claim 3 wherein said first image depicts the location
20 and orientation of the tissue ablation means.
5. The system according to claim 3, wherein the tissue ablation means is located
adjacent to the second imaging means and said second image depicts the tissue
undergoing ablation.
- 25 6. The system according to claim 3 wherein the tissue ablation means is a radio-
frequency ablation device.
7. The system according to claim 3 wherein the tissue ablation means is a plasma
30 discharge device.
8. The system according to claim 1 wherein the first imaging means is a camera.
9. The system according to claim 8 wherein the camera is a video camera.
- 35 10. The system according to claim 1 wherein the second imaging means is a camera.

11. The system according to claim 10 wherein the camera is a video camera.
12. The system according to claim 1 wherein the first imaging means is an
5 arthroscope.
13. The system according to claim 1 wherein the second imaging means is an arthroscope.
- 10 14. The system according to claim 13 wherein the arthroscope includes a flexible elongate portion having a camera positioned thereon that is adapted to be insertable into the cavity.
- 15 15. The system according to claim 1 wherein the first imaging means and the second imaging means are positioned on a support member and maintained in a spaced apart relationship relative to each other.
16. The system according to claim 15, wherein the support member is at least partially insertable within said bodily cavity.
- 20 17. The system according to claim 13, further comprising:
a position indication means variably positionable within said bodily cavity;
a position detection means for receiving a signal from the position indication means; and
25 a processor means that analyses said signal and provides an output indicative of the location of the position indication means relative to the position detection means.
18. The system according to claim 17, wherein the position indication means is a transmitter means and the position detection means is a receiver means.
- 30 19. The system according to claim 17, wherein the position indication means is a reflector means and the position detection means is a transceiver means and further wherein said signal is firstly transmitted from said transceiver means and is then reflected by said reflector means back to said transceiver means.

20. The system according to claim 1 further comprising an illuminating means for illuminating said cavity.
21. The system according to claim 2 wherein said display means comprises a first
5 monitor for said first image and at least a second monitor for said at least second image.
22. The system according to claim 2 wherein said display means comprises one monitor that displays said first image and said at least second image.
- 10 23. The system according to claim 17 wherein said output of the processor means is used to build a map of the bodily cavity.
24. The system according to claim 23 further comprising a comparator display that displays a visual comparison of said map and a real image of said bodily cavity.
- 15 25. The system according to claim 24 wherein the comparator display allows determination of the orientation of the second imaging means in said cavity.
26. The system according to claim 24 wherein said real image is obtained using an
20 imaging technique selected from the group comprising X-ray imaging, magnetic resonance imaging, and computer tomography imaging.
27. The system according to claim 26 wherein said real image is obtained prior to mapping of said bodily cavity.
- 25 28. The system according to claim 26 wherein said real image is obtained during said mapping of said bodily cavity.
29. The system according to claim 28 wherein said real image is continuously
30 updated during said mapping of said bodily cavity.
30. The system according to claim 18 wherein said transmitter means is positionable at or adjacent the location of said second imaging means.
- 35 31. The system according to claim 30 wherein said receiver means is positionable outside said bodily cavity.

32. The system according to claim 1 wherein said bodily cavity is the nuclear space of an intervertebral disc.
- 5 33. The system according to claim 1 wherein said bodily cavity is a joint cavity.
34. A system for mapping the interior of a bodily cavity of a patient, the system comprising:
- 10 a position indication means variably positionable within said bodily cavity;
- a position detection means for receiving a signal from the position indication means; and
- a processor means that analyses said signal and provides an output indicative of the location of the position indication means relative to the position detection means.
- 15 35. The system according to claim 34, wherein the position indication means is a transmitter means and the position detection means is a receiver means.
36. The system according to claim 34, wherein the position indication means is a reflector means and the position detection means is a transceiver means and further
- 20 wherein said signal is firstly transmitted from said transceiver means and is then reflected by said reflector means back to said transceiver means.
37. The system according to claim 34 wherein said output of the processor means is used to build a map of the bodily cavity.
- 25 38. The system according to claim 37 further comprising a comparator display that displays a visual comparison of said map and a real image of said bodily cavity.
39. The system according to claim 38 wherein said real image is obtained using an
- 30 imaging technique selected from the group comprising X-ray imaging, magnetic resonance imaging, and computer tomography imaging.
40. The system according to claim 38 wherein said real image is obtained prior to mapping of said bodily cavity.

41. The system according to claim 37, further comprising a tissue ablation means for ablating tissue in the bodily cavity, said ablation means being movable relative to the position detection means and positioned adjacent to said position indication means such that the location of the position indication means is indicative of the location of
5 the ablation means.

42. The system according to claim 41 wherein the tissue ablation means is a radio-frequency ablation device.

10 43. The system according to claim 41 wherein the tissue ablation means is a plasma discharge device.

44. The system according to claim 38 wherein said real image is obtained during said mapping of said bodily cavity.

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45. The system according to claim 38 wherein said real image is continuously updated during said mapping of said bodily cavity.

46. The system according to claim 34 wherein said position detection means is
20 positionable outside said bodily cavity.

47. The system according to claim 34 wherein said position detection means is positionable within said bodily cavity.

25 48. The system according to claim 34, further comprising a viewing means for imaging the interior of a bodily cavity of a patient, said viewing means comprising:

a first imaging means positionable within and for producing a first image of said interior; and

30 at least a second imaging means positionable within and for producing a second image of said interior;

wherein said second imaging means is movable relative to the first imaging means and positionable in a location wherein said first image depicts the location of the second imaging means.

35 49. The system according to claim 34 wherein said bodily cavity is the nuclear space of an intervertebral disc.

50. The system according to claim 34 wherein said bodily cavity is a joint cavity.

51. A method of imaging the interior of a bodily cavity of a patient, the method
5 comprising the steps of:

producing a first image of said interior wherein said first image is produced by a first imaging means positionable within said interior;

producing at least a second image of said interior wherein said at least a second image is produced by a second imaging means positionable within said interior; and

10 positioning said first imaging means in a location wherein said first image depicts the location of the second imaging means.

52. A method of mapping the interior of a bodily cavity of a patient, the method comprising the steps of:

15 introducing a position indication means within the bodily cavity, said position indication means being variably positionable within said bodily cavity;

positioning a position detection means to receive a signal from the position indication means; and

20 analysing said signal and providing an output indicative of the location of the position indication means relative to a position detection means.

53. The method of mapping according to claim 52, wherein the analysing step is performed by a processor means.

25 54. The method of mapping according to claim 52, wherein the position indication means is a transmitter means and the position detection means is a receiver means.

55. The method of mapping according to claim 52, wherein the position indication means is a reflector means and the position detection means is a transceiver means and
30 further wherein said signal is firstly transmitted from said transceiver means and is then reflected by said reflector means back to said transceiver means.

56. The method of mapping according to claim 53, further comprising a step of using said output to build a map of the bodily cavity.

57. The method of mapping according to claim 56, further comprising a step of displaying said map of the bodily cavity on a display means.

58. The method of mapping according to claim 57, further comprising a step of
5 comparing said map with a real image of said bodily cavity.

59. The method of mapping according to claim 58, wherein said real image is obtained using an imaging technique selected from the group comprising X-ray imaging, magnetic resonance imaging, and computer tomography imaging.

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60. The method of mapping according to claim 58, wherein the step of comparing said map with said real image comprises the steps of:

determining the real position of said position detection means relative to the bodily cavity; and

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superimposing said real position of said position detection means with said real image of said bodily cavity on said display means.

61. The method of mapping according to claim 56, further comprising the steps of:
ablating at least a portion of the bodily cavity using an ablation means; and
20 updating said map during said ablation.

62. A device for imaging the interior of a bodily cavity of a patient comprising:
a support member at least partially positionable within said interior;
a first imaging means engageable with said support member for producing a first
25 image of said interior; and

at least a second imaging means engageable with said support member for producing a second image of said interior;

wherein said second imaging means is movable relative to the first imaging means and positionable at a location wherein said first image depicts the location of the
30 second imaging means.

63. The device according to claim 62, further comprising a tissue ablation means for ablating tissue in said bodily cavity, said ablation means being engageable with said support member and being moveable relative to the first imaging means.

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64. The device according to claim 63, wherein the tissue ablation means is located adjacent to the second imaging means and said first image depicts the location and orientation of the tissue ablation means.
- 5 65. A device for mapping the interior of a bodily cavity of a patient, the device comprising:
a support member at least partially positionable within said bodily cavity;
a position indication means engageable with said support member and variably
positionable within said bodily cavity;
10 a position detection means for receiving a signal from the position indication means; and
a processor means that analyses said signal and provides an output indicative of the location of the position indication means relative to the position detection means.
- 15 66. The device according to claim 65, wherein said position detection means is engageable with said support member and positionable within said bodily cavity.
67. The device according to claim 65, wherein the position indication means is a transmitter means and the position detection means is a receiver means.
- 20 68. The device according to claim 65, wherein the position indication means is a reflector means and the position detection means is a transceiver means and further wherein said signal is firstly transmitted from said transceiver means and is then reflected by said reflector means back to said transceiver means.
- 25 69. The device according to claim 65, further comprising a tissue ablation means for ablating tissue in said bodily cavity, said ablation means being engageable with said support member and being moveable relative to the position detection means .
- 30 70. The device according to claim 69, wherein the tissue ablation means is located adjacent to the position indication means.